

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.06 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS at 9VAC25-260-00 et seq (effective February 1, 2010) and updating permit language, as appropriate, to reflect current boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Rush River WWTP
485 Gay St
Washington, VA 22747
SIC Code : 4952 WWTP
Facility Location: 564 Warren Ave
Washington, VA 22747
County: Rappahannock
Facility Contact Name: John Sullivan
Telephone Number: 540-675-3128
2. Permit No.: VA0091651
Expiration Date of previous permit: 5/31/2011
Other VPDES Permits associated with this facility: VAN020108
Other Permits associated with this facility: None
E2/E3/E4 Status: Not Applicable
3. Owner Name: Town of Washington
Owner Contact/Title: John Sullivan, Mayor
Telephone Number: 540-675-3128
4. Application Complete Date: December 8, 2010
Permit Drafted By: Alison Thompson
Date Drafted: January 5, 2011
Draft Permit Reviewed By: Joan Crowther
Date Reviewed: January 10, 2011
WPM Review: Bryant Thomas
Date Reviewed: January 18, 2011
Public Comment Period : Start Date: March 30, 2011
End Date: April 29, 2011
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination.
Receiving Stream Name : Rush River
Drainage Area at Outfall: 14.7 sq.mi.
River Mile: 6.83
Stream Basin: Rappahannock
Subbasin: Not Applicable
Section: 4
Stream Class: III
Special Standards: None
Waterbody ID: VAN-E05R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.969 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.775 MGD
Harmonic Mean Flow: Undefined
30Q5 Flow: 0.13 MGD
303(d) Listed: Yes
30Q10 Flow: 0.058 MGD
TMDL Approved: Yes
Date TMDL Approved: Bacteria TMDL 1/23/2008
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input checked="" type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	
7. Licensed Operator Requirements: Class III

8. Reliability Class: Class I

9. Permit Characterization:

<input type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The wastewater enters the facility and is screened prior to entering one of the two Sequencing Batch Reactors for biological treatment. From the SBRs, the wastewater is equalized and aerated, and then pumped to the tertiary filters, and disinfected via ultraviolet disinfection. The final effluent pump station pumps the effluent to the flow meter and through Outfall 001 to the Rush River.

The CTO for this facility was issued on April 21, 2010. The first discharge occurred on April 26, 2010.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic and/or Commercial	See Item 10 above.	0.06 MGD	38° 43' 19" N 78° 09' 48" W
See Attachment 3 for (Washington Quad, DEQ #197B) topographic map.				

11. Sludge Treatment and Disposal Methods:

Waste activated sludge is wasted to a sludge holding tank and hauled by an approved contractor to the Remington WWTP (VA0076805) for disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2

3-RUS005.66	DEQ Monitoring station on the Rush River is located at the Route 683 Bridge approximately 0.01 mile upstream of the outfall.
3-RUS005.24	DEQ Monitoring station located on the Rush River is located at the Route 626 Bridge approximately 0.5 mile downstream of the outfall.
3-RUS007.41	DEQ Monitoring station on the Rush River is located at the Route 624 Bridge upstream of the outfall.
3-RUS006.49	DEQ Biological Monitoring station on the Rush River is located at the Route 628 Bridge upstream of the outfall.
VPDES Permit No. VA0087581	Town of Washington Water Treatment Plant (WTP) draws raw water from groundwater wells. The primary treatment for the potable water supply is by two greensand filters, with each filter capable of treating 60 gallons per minute (gpm).

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Liquid Alum	Two 55-gallon drums (600 lb each)	Stored in a dedicated chemical feed room
Soda Ash	1000 pounds	Stored in a dedicated chemical feed room
Liquid Polymer	One 55-gallon drum	Stored in a dedicated chemical feed room

14. Site Inspection:

Performed by Alison Thompson on January 20, 2011 (Attachment 4).

15. Receiving Stream Water Quality and Water Quality Standards:a) Ambient Water Quality Data

The segment of the Rush River (VAN-E05R_RUS02A02) the receives that discharge from this facility begins at the confluence with Big Devils Stairs, at rivermile 10.2, and continues downstream until the confluence with Big Branch, approximately 0.98 rivermile upstream of Route 621. The nearest DEQ monitoring station is 3-RUS005.66, located at the Route 683 bridge crossing, approximately 0.01 mile upstream of the outfall location. The closest downstream monitoring station is 3-RUS005.24, located at the Route 626 bridge crossing, approximately 0.5 miles downstream from Outfall 001. The following is the monitoring summary for this segment of the Rush River, as taken from the Draft 2010 Integrated Assessment:

The list of stations monitored includes DEQ ambient monitoring station 3-RUS005.24 located at the Route 626 bridge crossing; DEQ ambient and biological monitoring station 3-RUS005.66 at Route 683; DEQ biological monitoring station 3-RUS006.49 at Route 628; and DEQ ambient and biological monitoring station 3RUS007.41 at the Route 624 bridge crossing. Citizen monitoring stations 3RUS-6-SOS, 3RUS-14-RFLOW, 3RUS-5-RFLOW, 3RUS-6-RFLOW, 3RUS-13-RFLOW, 3RUS-8-RFLOW, 3RUS-10-RFLOW, 3RUS-7-RFLOW, 3RUS-9-RFLOW, and 3RUS-11-RFLOW.

DEQ *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use.

Citizen monitoring finds a high probability of adverse conditions for biota; however, DEQ biological monitoring classifies this segment as fully supporting the aquatic life use. The aquatic life use will be listed as fully supporting with an observed effect. It is suspected that natural low flows are the cause of some of the lower SCI scores observed at monitoring locations along the Rush River. It is possible that this portion of the Rush River could be classified as intermittent. DEQ biologists plan to monitor this segment to obtain a clearer determination of the attainment of the aquatic life use.

The wildlife use is considered fully supporting. The fish consumption use was not assessed.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the Draft 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law to include the *Chesapeake Bay Watershed Nutrient Credit Exchange Program*. This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

The full planning statement can be found in the reissuance file.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Rush River, is located within Section 4 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5 details other water quality criteria applicable to the receiving stream.

Ammonia:

For the 2006 issuance, staff used default values for the effluent of 25°C for temperature and 7.5 s.u. for pH since the facility was not built and the critical flows of the stream were 0.0 MGD. The facility came online in April 2010 so there is limited effluent data to evaluate (Attachment 6). Staff did review the limited data set and determined that the 90th percentile pH for the effluent is 8.2 s.u. and 90th percentile annual temperature is 29.2°C. The wet season according to the flow data is December through May, but there is only data from the end of April 2010, May 2010, and part of December 2010; therefore, staff will use a default temperature of 15°C for the wet season temperature.

Staff reviewed Rush River stream data for the period January 1, 2000 through December 31, 2010; all available data from DEQ's monitoring as well as the in-stream monitoring done by the facility is presented in Attachment 7. A 90th percentile annual pH was determined to be 7.84 s.u. Default temperatures of 25°C annual and 15°C wet season shall be used for the stream since the data pool for the seasonal temperatures is extremely limited.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). There is no hardness data for this facility. Staff guidance suggests using a default hardness value of 50 mg/L CaCO₃ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 5 are based on this value.

Bacteria Criteria: The Virginia Water Quality Standards (9VAC25-260-170 A.) states that the following criteria shall apply to protect primary recreational uses in surface waters:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean ¹
Freshwater <i>E. coli</i> (N/100 ml)	126

¹For a minimum of four weekly samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Rush River, is located within Section 4 of the

Rappahannock Basin. This section has been designated with no special standards.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on January 5, 2011, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge. The results of the search can be found in the reissuance file.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream was classified as Tier 2 during the 2006 permit issuance based on an evaluation of ambient data for pH, temperature and dissolved oxygen. Staff believes that this classification is still correct and will carry forward the Tier 2 designation with this reissuance. No significant degradation to the existing water quality will be allowed. In accordance with current DEQ guidance, no significant lowering of water quality is to occur where permit limits are based on the following:

- The dissolved oxygen in the receiving stream is not lowered more than 0.2 mg/L from the existing levels;
- The pH of the receiving stream is maintained within the range 6.0-9.0 S.U.;
- There is compliance with all temperature criteria applicable to the receiving stream;
- No more than 25% of the unused assimilative capacity is allocated for toxic criteria established for the protection of aquatic life; and
- No more than 10% of the unused assimilative capacity is allocated for criteria for the protection of human health.

The antidegradation policy also prohibits the expansion of mixing zones to Tier 2 waters unless the requirements of 9VAC25-260-30.A.2 are met. The draft permit is not proposing an expansion of the existing mixing zone.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the Discharge Monitoring Reports was reviewed and determined to be suitable for evaluation. Effluent data were reviewed, and there have been no exceedances of the established limitations.

The only pollutant that requires a wasteload allocation analysis is Ammonia as N. Total Residual Chlorine will not be analyzed since the facility installed UV disinfection.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for chronic ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C _s	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

Antidegradation Wasteload Allocations (AWLAs).

Since the receiving stream has been determined to be a Tier II water, staff must also determine antidegradation wasteload allocations (AWLAs). The steady state complete mix equation is used substituting the antidegradation baseline (C_b) for the in-stream water quality criteria (C_o):

$$AWLA = \frac{C_b (Q_e + Q_s) - (C_s)(Q_s)}{Q_e}$$

Where:

AWLA	=	Antidegradation-based wasteload allocation
C _b	=	In-stream antidegradation baseline concentration
Q _e	=	Design flow
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for chronic ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
C _s	=	Mean background concentration of parameter in the receiving stream.

Calculated AWLAs for the pollutants noted in b. above are presented in Attachment 5.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs or AWLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

The facility was given a monthly average TKN limit of 5.0 mg/L in lieu of an ammonia limit as part of the permit issuance. A TKN limit of 5.0 mg/L assumes that the majority of unoxidized nitrogen is in the form of refractory organic compounds that will not be easily oxidized. With a TKN limit of 5 mg/L combined with denitrification requirements, staff determined that there was no need for specific ammonia limits. The weekly average TKN limit of 7.5 mg/L was based on a multiplier of 1.5 times the monthly average.

Staff reevaluated pH and temperature assumptions used and concluded they were different than what was used previously to derive ammonia criteria. As result, staff used the new data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (Attachment 8). DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

It is staff's best professional opinion that the TKN limit of 5.0 mg/L be carried forward with this reissuance. Effluent monitoring shows that the facility has an average TKN value of 1.4 mg/L since commencing discharge and an average Total Nitrogen concentration of 2.7 mg/L. Stream monitoring also indicates that Ammonia as N is not present in detectable concentrations. With the denitrification requirements to protect the Chesapeake Bay also in place, the ammonia criteria for the Rush River are protected as well.

2) Total Residual Chlorine:

The facility installed UV disinfection; therefore, chlorine limits are no longer applicable and were not included in the reissuance.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to carbonaceous biochemical oxygen demand-5 day (CBOD₅), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed. The current permit has the Dissolved Oxygen (DO) minimum as 7.3 mg/L. A review of the model documentation (Attachment 9) shows that the effluent was modeled at a DO minimum of 6.0 mg/L with a background stream DO of 7.3 mg/L; therefore, staff will correct this typographical error with this reissuance.

Dissolved Oxygen, CBOD₅, and TKN limitations are based on the stream modeling conducted in October 2005 (Attachment 9) and are set to ensure that the receiving stream D.O. does not decrease more than 0.2 mg/L to meet the requirements of the antidegradation policy. Staff reviewed the model results and believes that there are no updates necessary to the model with the reissuance.

It is staff's practice to equate the Total Suspended Solids limits with the CBOD₅ limits. TSS limits are established to equal CBOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting

and restoring the Bay and its tributaries. There are three regulations that necessitate the inclusion of nutrient limitations:

- 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires new or expanding discharges with design flows of ≥ 0.04 mgd to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).
- 9VAC25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥ 0.5 mgd above the fall line and ≥ 0.1 mgd below the fall line. This regulation limits the total nitrogen and total phosphorus mass loadings from these discharges.
- 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* became effective January 1, 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN020108.

Monitoring for Nitrates + Nitrites is included in this permit; orthophosphate monitoring has been removed from the permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820.

Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual average concentrations are the same as the performance requirements of the WQIF grant, 5.0 mg/L annual average Total Nitrogen and 0.8 mg/L annual average Total Phosphorus.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, CBOD₅, Total Suspended Solids, TKN, pH, Dissolved Oxygen, *E. coli*, Total Nitrogen and Total Phosphorus.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.06 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD ₅	3,5	12 mg/L 2.7 kg/day	18 mg/L 4.1 kg/day	NA	NA	1/W	4H-C
Total Suspended Solids (TSS)	2	12 mg/L 2.7 kg/day	18 mg/L 4.1 kg/day	NA	NA	1/W	4H-C
Dissolved Oxygen	3	NA	NA	6.0 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	3,5	5.0 mg/L 1.1 kg/day	7.5 mg/L 1.7 kg/day	NA	NA	1/W	4H-C
<i>E. coli</i> (Geometric Mean)*	3	126 n/100mls	NA	NA	NA	1/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	1/2W	4H-C
Total Nitrogen ^a .	3, 6	NL mg/L	NA	NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date ^b .	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^b .	3, 6	5.0 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L	NA	NA	NA	1/2W	4H-C
Total Phosphorus – Year to Date ^b .	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^b .	3, 6	0.8 mg/L	NA	NA	NA	1/YR	Calculated

The basis for the limitations codes are:

- | | | |
|------------------------------------|---|--|
| 1. Federal Effluent Requirements | <i>MGD</i> = Million gallons per day. | <i>1/D</i> = Once every day. |
| 2. Best Professional Judgment | <i>NA</i> = Not applicable. | <i>1/W</i> = Once every week. |
| 3. Water Quality Standards | <i>NL</i> = No limit; monitor and report. | <i>1/M</i> = Once every month. |
| | <i>S.U.</i> = Standard units. | <i>1/2W</i> = Once every two weeks, >7 days apart. |
| 4. DEQ Disinfection Guidance | <i>TIRE</i> = Totalizing, indicating and recording equipment. | <i>1/YR</i> = Once every calendar year. |
| 5. Stream Model- Attachment 9 | | |
| 6. 9VAC25-40 (Nutrient Regulation) | | |

4H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

*Between 10:00 a.m. and 4:00 p.m.

20. Other Permit Requirements:

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

21. Other Special Conditions:

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. Within 90 days of the effective date of this permit, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- f) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.
- g) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I.
- h) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

- j) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- k) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- l) In-stream Monitoring. The State Water Control Law at §62.1-44.21 authorizes the State Water Control Board to request information needed to determine the discharge's impact on State Waters. Staff included in-stream monitoring with the issuance of the permit. Since the CTO was not received until April 2010, only one year of data was collected. It is staff's best professional judgment that the in-stream monitoring continue through the next permit cycle. This monitoring data may be used to derive water quality criteria dependent upon the receiving stream characteristics as well as assess compliance with such water quality criteria as changes in temperature.
- m) Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.
- n) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.
- o) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1) Total Residual Chlorine requirements were removed from Part I.B of the permit.
 - 2) The CTO documentation noted that the facility meets Class I Reliability; therefore, the Reliability Class in the permit was changed from Class II to Class I.
- b) Monitoring and Effluent Limitations:
 - 1) Total Residual Chlorine limitations were removed since the facility installed UV disinfection.
 - 2) The Total Nitrogen annual average was updated from 8.0 mg/L to 5.0 mg/L based on the technology installed and the commitments from the WQIF grant.
 - 3) The Total Phosphorus annual average was updated from 1.0 mg/L to 0.8 mg/L based on the technology installed and the commitments from the WQIF grant.
 - 4) Orthophosphate monitoring was removed from the permit.
 - 5) The DO minimum was corrected to 6.0 mg/L as presented in the DO modeling in Attachment 9.

24. Variances/Alternate Limits or Conditions:

None

25. Public Notice Information:

First Public Notice Date: 3/30/2011

Second Public Notice Date: 4/6/2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3834, Alison.Thompson@deq.virginia.gov. See Attachment 10 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

This segment of the Rush River is listed as not meeting the recreation use. Sufficient excursions from the maximum *E. coli* bacteria criterion were recorded at DEQ's ambient water quality monitoring station 3-RUS005.66 (5 of 14 samples - 35.7%) at the Route 683 crossing, upstream of Route 211 / 522, and at Station 3-RUS005.24 (3 of 11 samples - 27.3%) located at the Route 626 bridge crossing, to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment. The Upper Rappahannock River Watershed Bacteria TMDL was completed and approved by EPA on 01/23/2008. The WLA for this facility is 1.04E+11 cfu/year of *E. coli*.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): None.

Staff Comments: None.

Public Comment:

EPA Checklist: The checklist can be found in Attachment 11.

Attachments to the VA0091651 Fact Sheet

Attachment 1	Flow Frequency Determination
Attachment 2	Facility Schematic
Attachment 3	Topographic Map
Attachment 4	Site Inspection
Attachment 5	Water Quality Criteria and Wasteload Allocation Determinations
Attachment 6	Effluent Data
Attachment 7	Stream Data
Attachment 8	Limit Evaluations
Attachment 9	Dissolved Oxygen Model
Attachment 10	Public Notice
Attachment 11	EPA Checklist

Rush River Flow Frequency Determination
Rush River WWTP – VA0091651

The 2006 gaging station statistics were reviewed on December 28, 2010, for the Rush River gaging station and found to be identical to the values used for the 2006 permit issuance; therefore, no changes were necessary to the flow frequencies used for the calculation of the wasteload allocations.

Rush River at Washington, VA (#01662500):

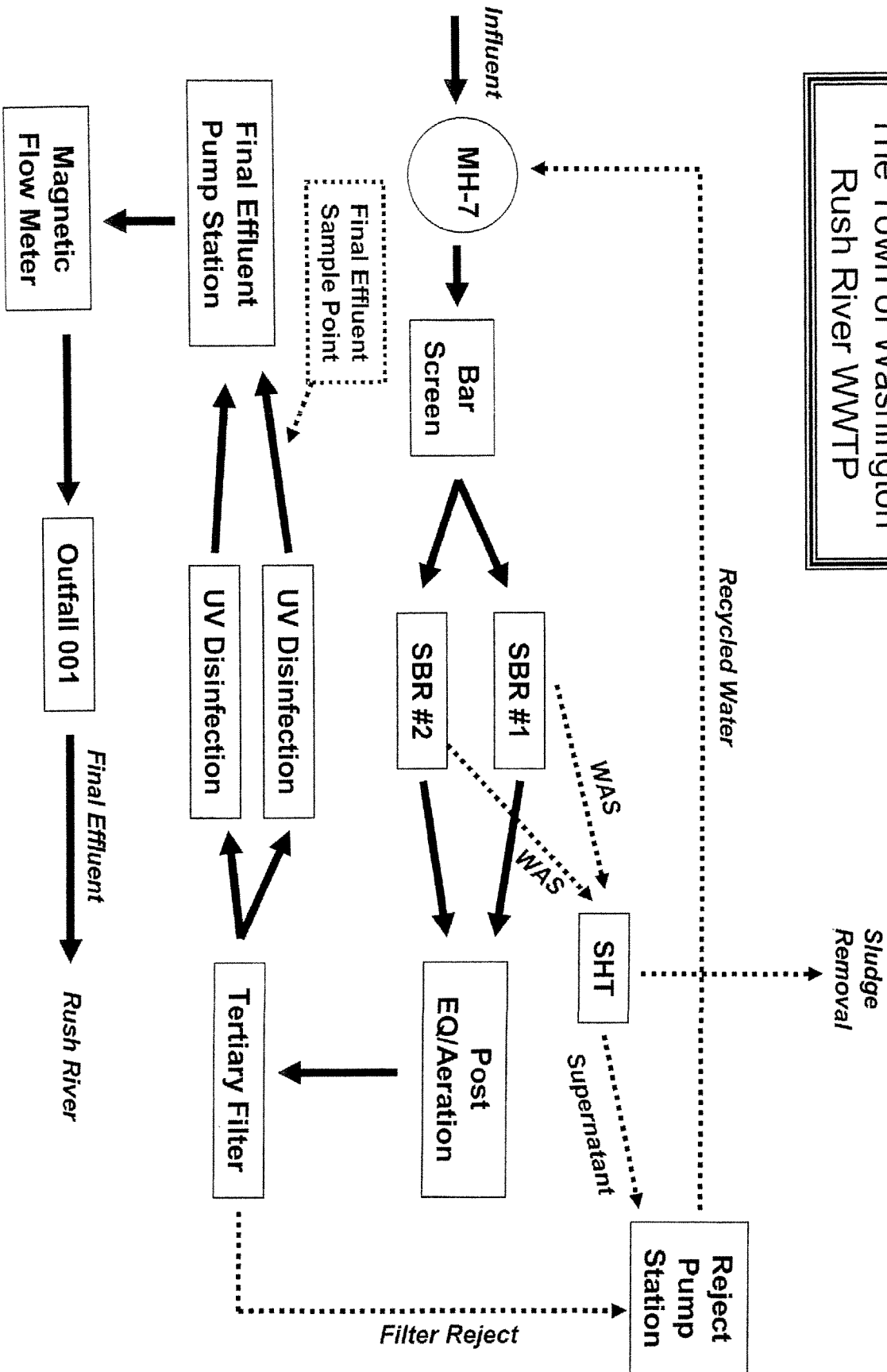
Drainage Area = 14.7 mi ²			
Low flow		High flow	
1Q10 = 0.0 cfs	0.0 mgd	1Q10 = 1.2 cfs	0.775 mgd
7Q10 = 0.0 cfs	0.0 mgd	7Q10 = 1.5 cfs	0.969 mgd
30Q5 = 0.21 cfs	0.13 mgd	30Q10 = 2.7 cfs	1.74 mgd
30Q10 = 0.09 cfs	0.058 mgd	HM = undefined	undefined

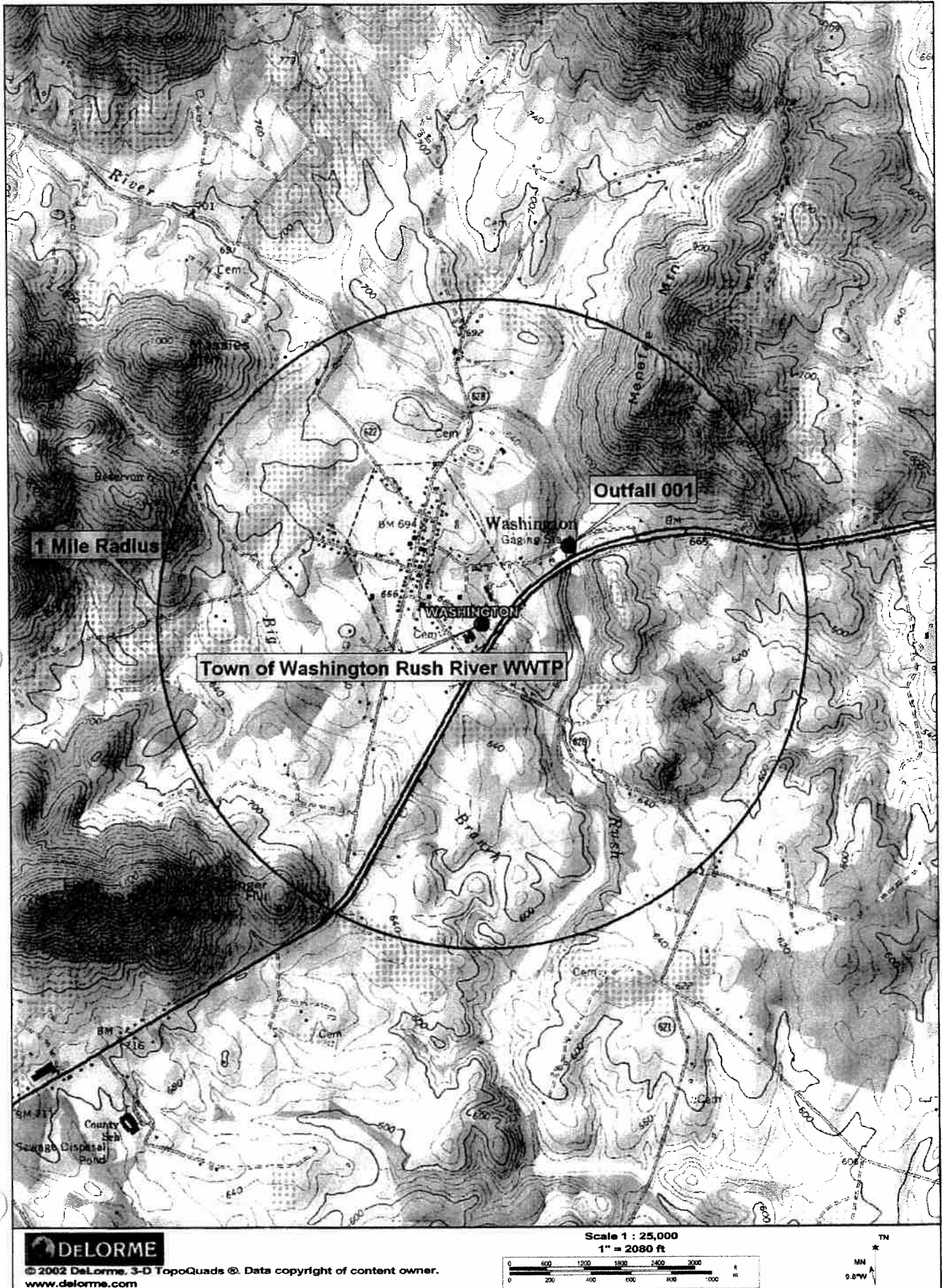
Rush River at discharge point:(at same location as gauging station)

Drainage Area = 14.7 mi ²			
Low flow		High flow	
1Q10 = 0.0 cfs	0.0 mgd	1Q10 = 1.2 cfs	0.775 mgd
7Q10 = 0.0 cfs	0.0 mgd	7Q10 = 1.5 cfs	0.969 mgd
30Q5 = 0.21 cfs	0.13 mgd	30Q10 = 2.7 cfs	1.74 mgd
30Q10 = 0.09 cfs	0.058 mgd		

High flow months are December to May.
Gauging station data is from 1953 to 1977.

Flow/Process Diagram of The Town of Washington Rush River WWTP





MEMORANDUM

TO: VA0091651 Reissuance File

FROM: Alison Thompson, NRO

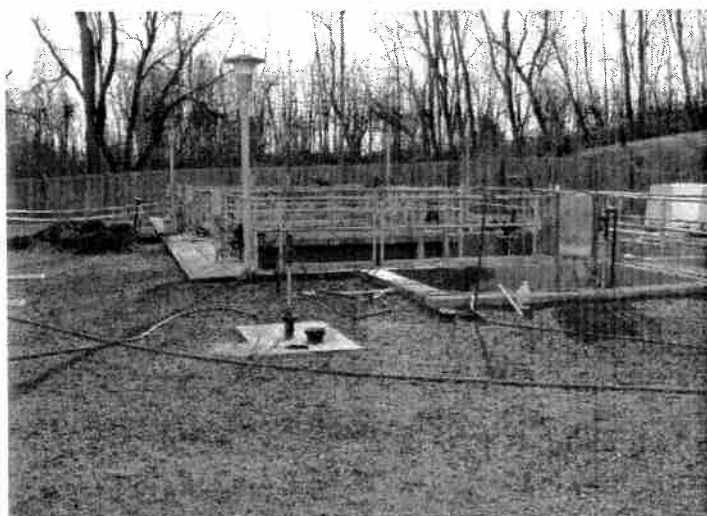
SUBJECT: Site Visit on January 20, 2011 to the Rush River WWTP
VPDES Permit No. VA0091651

As part of the 2011 reissuance of the VPDES permit for the Rush River WWTP, staff performed a site visit and stream inspection on January 20, 2011. DEQ staff present at the inspection included Alison Thompson and Sharon Allen. The Town of Washington employs two ESS to operate the WWTP; Don Hearl and Troy Jenkins from ESS were present to provide the tour of the facility.

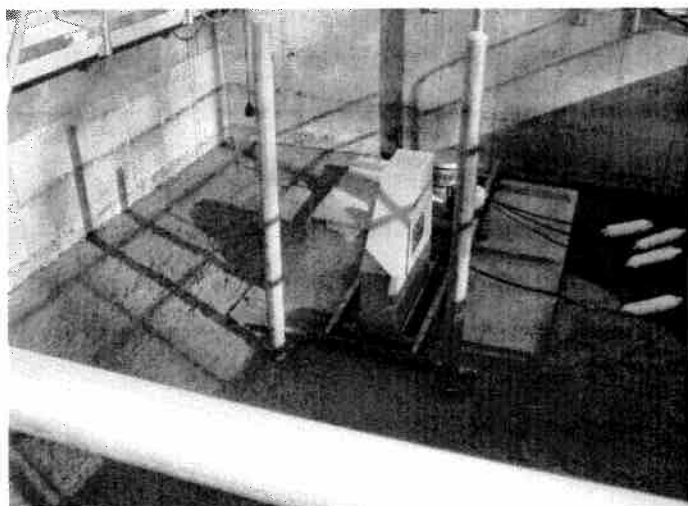
This WWTP treats the wastewater from the Town of Washington located in Rappahannock County. The facility received the Certificate to Operate on April 21, 2010 and the first discharge occurred on April 26, 2010. The design flow of the facility is 0.06 MGD; current flows at the facility are 0.013-0.015 MGD and are intermittent. The collection system is force main with ninety eight grinder pumps pumping the wastewater to the Courthouse; from the Courthouse, the wastewater flows via gravity to the influent pump station.

The wastewater is manually screened and is treated in one of the two SBR units. When one SBR is in decant, flows are diverted to the other SBR unit. Waste Activated Sludge is pumped to the sludge holding tank; when the tank is full, a contractor hauls the sludge to the Remington STP. After biological treatment in the SBR, the decanted wastewater is pumped to the equalization tank before it is pumped to the tertiary filter. Alum is fed at this point. The filter is an upflow filter with approximately 10 foot depth. Reject water is pumped to the head of the plant. From the filter, the water is disinfected via ultraviolet disinfection (Trojan system). From the UV units, the final effluent is metered and then pumped from the Final Effluent Pump Station to the Rush River. The outfall line is approximately 0.5 miles long. The outfall is a head wall. There was no discharge at the time of the inspection.

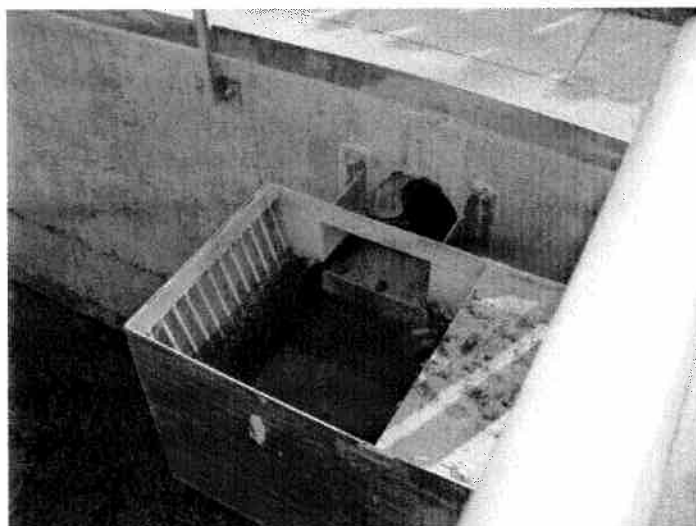
The Rush River was viewed upstream of the discharge, in the immediate vicinity of the discharge, and downstream of the discharge. Upstream of the discharge, the Rush River was viewed from the Route 211 Business Bridge. The stream was approximately 10 feet wide with a rocky streambed and 6-8 inches in depth. The water was clear and no algal growth was noted on the rocks. In the immediate vicinity of the outfall, the river is approximately 20 feet wide; it appears as though the outfall does get submerged during higher flows in the stream. The streambed is very rocky and anywhere from a couple of inches to 3 feet in depth in the vicinity of the outfall. There is no evidence of algae growth or sludge deposits in the stream. At the downstream Route 626 vantage point, the river is approximately 15 feet wide and 1-2 feet deep. The stream is flanked by farmland on both sides of the stream. Again, there was no evidence of algal growth or sludge deposits.



Rush River WWTP – the yellow tape is around the hole where a contractor just repaired a leak to the alum feed line.



SBR #1



Headworks – Manual Barscreen



Outfall 001 for the Rush River WWTP – view from the opposite bank of the Rush River

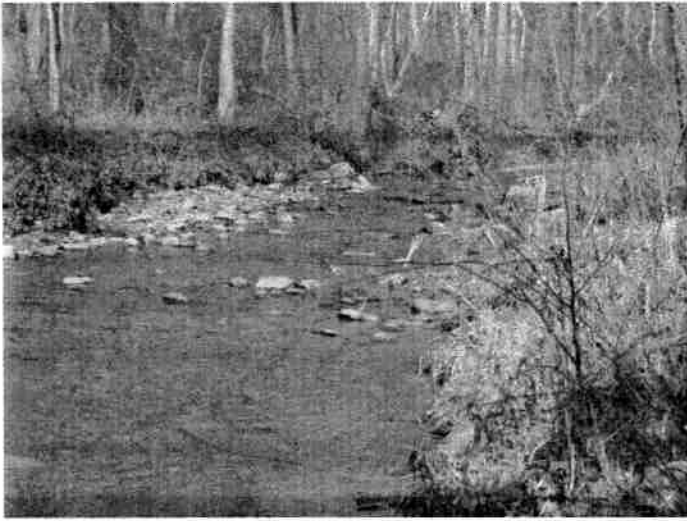


Close up of Outfall 001 – slight amount of green algae at the immediate outfall area. No discharge occurred during the site



View from outfall headwall to the Rush River. It is evident that the outfall is submerged during higher stream flows.

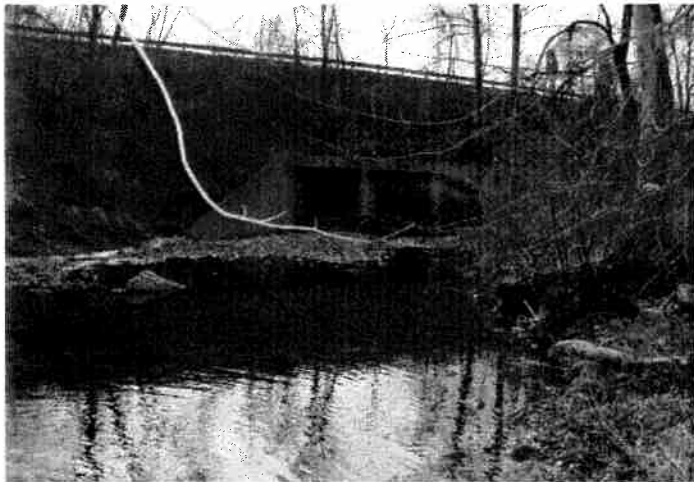
visit.



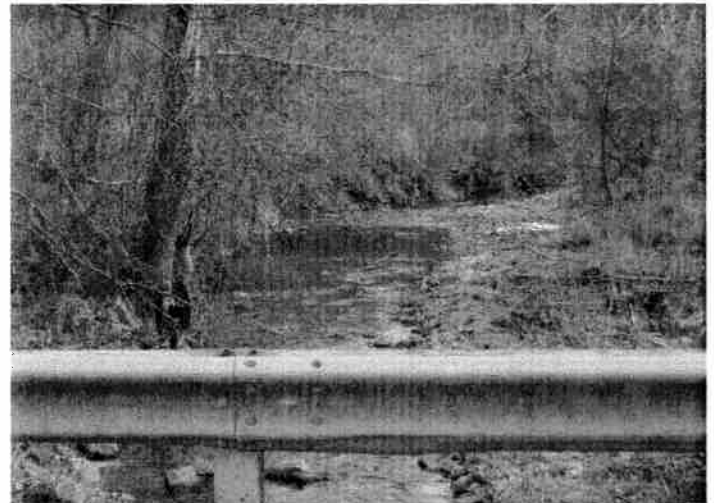
View of the Rush River just upstream of Outfall 001



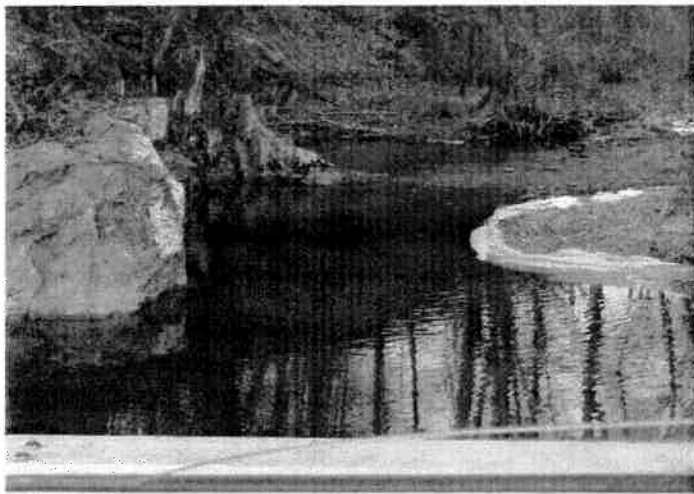
View of the Rush River at the Outfall. The outfall is to the right of the photo.



View of the Rush River looking downstream from Outfall 001. Note the log jam at the culvert from higher stream flows. This is where the Rush River crosses under Route 211.



View of the Rush River at the Route 211 Business bridge which is upstream of Outfall 001.



View of the Rush River immediately upstream of the Route 211 Business bridge. Note the ice on the right stream bank.



View of the Rush River at Route 626 downstream of Outfall 001.



The Rush River immediately downstream of the Route 626 bridge.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Rush River WWTP

Permit No.: VA0091651

Receiving Stream: Rush River

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	50 mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	25 deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	29.2 deg C
90% Temperature (Wet season) =	15 deg C	30Q10 (Annual) =	0.058 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.84 SU	1Q10 (Wet season) =	0.775 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	8.2 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	1.74 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	2	30Q5 =	0.13 MGD			Discharge Flow =	0.06 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	3.1E+03	--	--	na	9.9E+01	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	2.9E+01	--	--	na	9.3E+01	--	--	na
Acrylonitrile ^C	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	na	2.5E+01	--	--	na
Aldrin ^C	0	3.0E+00	--	na	5.0E+04	3.0E+00	--	na	5.0E+05	7.5E+01	--	na	5.0E+05	7.5E+01	--	na
Ammonia-N (mg/l) (Yearly)	0	5.73E+00	1.10E+00	na	--	5.7E+00	2.2E+00	na	--	1.43E+00	2.75E+01	na	--	1.4E+00	5.4E+01	na
Ammonia-N (mg/l) (High Flow)	0	1.09E+01	2.90E+00	na	--	1.5E+02	8.7E+01	na	--	2.73E+00	7.26E+01	na	--	3.8E+01	2.2E+01	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	1.3E+05	--	--	na	4.0E+03	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	2.0E+03	--	--	na	6.4E+01	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	8.5E+01	3.8E+01	na	--	8.5E+01	3.8E+01	na
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na
Ben ^C	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	na	5.1E+01	--	--	na
Ben ^C	0	--	--	na	2.0E+03	--	--	na	2.0E+03	--	--	na	2.0E+04	--	--	na
(a) anthracene ^C	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+02	--	--	na
(b) fluoranthene ^C	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+02	--	--	na
(k) fluoranthene ^C	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+02	--	--	na
(a) pyrene ^C	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+02	--	--	na
chloroethyl Ether ^C	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	na	5.3E+01	--	--	na
chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	2.1E+05	--	--	na	6.5E+03	--	--	na
ethylhexyl Phthalate ^C	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	na	2.2E+00	--	--	na
form ^C	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	na	1.4E+02	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	6.0E+03	--	--	na	1.9E+02	--	--	na
Cadmium	0	1.8E+00	6.6E+01	na	--	1.8E+00	6.6E+01	na	--	4.5E+01	1.6E+01	na	--	4.5E+01	1.6E+01	na
Carbon Tetrachloride ^C	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	na	1.6E+00	--	--	na
Chlordane ^C	0	2.4E+00	4.3E+03	na	8.1E+03	2.4E+00	4.3E+03	na	8.1E+03	6.0E+01	1.1E+03	na	8.1E+04	6.0E+01	1.1E+03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	2.2E+05	5.8E+04	na	--	2.2E+05	5.8E+04	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	4.8E+00	2.8E+00	na	--	4.8E+00	2.8E+00	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	5.1E+03	--	--	na	1.6E+02	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorobromomethane ^c	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	na	1.3E+01	--	--	na	1.3E+01	--	--	na	1.3E+01
Chloroform	0	--	--	na	1.1E+04	--	--	na	3.5E+04	--	--	na	1.1E+03	--	--	na	3.5E+03	--	--	na	3.5E+03
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	5.1E+03	--	--	na	1.6E+02	--	--	na	5.1E+02	--	--	na	5.1E+02
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	4.8E+02	--	--	na	1.5E+01	--	--	na	4.8E+01	--	--	na	4.8E+01
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	2.1E-02	1.0E-02	na	--	2.1E-02	1.0E-02	na	--	2.1E-02	1.0E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	8.1E+01	1.1E+01	na	--	8.1E+01	1.1E+01	na	--	8.1E+01	1.1E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	4.0E+00	2.8E+00	na	--	4.0E+00	2.8E+00	na	--	4.0E+00	2.8E+00	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	1.0E+01	--	--	--	3.2E+01	--	--	--	na	--
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-03	--	--	na	1.8E-03	--	--	na	1.8E-03
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	1.7E+00	1.2E+00	na	--	1.7E+00	1.2E+00	na	--	1.7E+00	1.2E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	5.1E+04	5.5E+00	1.3E+00	na	1.6E+03	5.5E+00	1.3E+00	na	5.1E+03	5.5E+00	1.3E+00	na	5.1E+03
DDD ^c	0	--	--	na	3.1E+03	--	--	na	3.1E+03	--	--	na	3.1E+04	--	--	na	3.1E+04	--	--	na	3.1E+04
DDE ^c	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-04	--	--	na	2.2E-04	--	--	na	2.2E-04
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	2.8E-01	2.5E-04	na	2.2E-04	2.8E-01	2.5E-04	na	2.2E-04	2.8E-01	2.5E-04	na	2.2E-04
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	4.3E-02	4.3E-02	na	--	4.3E-02	4.3E-02	na	--	4.3E-02	4.3E-02	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	4.1E+03	--	--	na	1.3E+02	--	--	na	4.1E+02	--	--	na	4.1E+02
1,3-Dichlorobenzene	0	--	--	na	9.6E-02	--	--	na	3.0E+03	--	--	na	9.6E+01	--	--	na	3.0E+02	--	--	na	3.0E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E-02	--	--	na	6.0E+02	--	--	na	1.9E+01	--	--	na	6.0E+01	--	--	na	6.0E+01
3,3-Dichlorobenzidine ^c	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	na	2.8E-02	--	--	na	2.8E-02	--	--	na	2.8E-02
Dichlorobromomethane ^c	0	--	--	na	1.7E-02	--	--	na	1.7E-02	--	--	na	1.7E+01	--	--	na	1.7E+01	--	--	na	1.7E+01
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	na	3.7E+01	--	--	na	3.7E+01	--	--	na	3.7E+01
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	2.2E+04	--	--	na	7.1E+02	--	--	na	2.2E+03	--	--	na	2.2E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	3.2E+04	--	--	na	1.0E+03	--	--	na	3.2E+03	--	--	na	3.2E+03
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	9.2E+02	--	--	na	2.9E+01	--	--	na	9.2E+01	--	--	na	9.2E+01
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	na	1.5E+01
1,2-Dichloropropane ^c	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+01	--	--	na	2.1E+01	--	--	na	2.1E+01
1,3-Dichloropropene ^c	0	--	--	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	6.0E-02	1.4E-02	na	5.4E-05	6.0E-02	1.4E-02	na	5.4E-05	6.0E-02	1.4E-02	na	5.4E-05
Dieldrin ^c	0	--	--	na	4.4E-04	--	--	na	1.4E+05	--	--	na	4.4E+03	--	--	na	1.4E+04	--	--	na	1.4E+04
Diethyl Phthalate	0	--	--	na	8.5E-02	--	--	na	2.7E+03	--	--	na	8.5E+01	--	--	na	2.7E+02	--	--	na	2.7E+02
2,4-Dimethylphenol	0	--	--	na	1.1E+06	--	--	na	3.5E+06	--	--	na	1.1E+05	--	--	na	3.5E+05	--	--	na	3.5E+05
Dimethyl Phthalate	0	--	--	na	4.5E+03	--	--	na	1.4E+04	--	--	na	4.5E+02	--	--	na	1.4E+03	--	--	na	1.4E+03
Di-n-Butyl Phthalate	0	--	--	na	5.3E+03	--	--	na	1.7E+04	--	--	na	5.3E+02	--	--	na	1.7E+03	--	--	na	1.7E+03
2,4-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	8.9E+02	--	--	na	2.8E+01	--	--	na	8.9E+01	--	--	na	8.9E+01
2-Methyl-4,6-Dinitrophenol	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	na	3.4E+00	--	--	na	3.4E+00	--	--	na	3.4E+00
2,4-Dinitrotoluene ^c	0	--	--	na	5.1E-08	--	--	na	1.6E-07	--	--	na	5.1E-09	--	--	na	1.6E-08	--	--	na	1.6E-08
tetrachlorobenzo-p-dioxin	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	na	2.0E-01	--	--	na	2.0E-01	--	--	na	2.0E-01
1,2-Diphenylhydrazine ^c	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	2.8E+02	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	2.8E+01	5.5E-02	1.4E-02	na	2.8E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	2.8E+02	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	2.8E+01	5.5E-02	1.4E-02	na	2.8E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	5.5E-02	1.4E-02	--	--	5.5E-02	1.4E-02	--	--	5.5E-02	1.4E-02	--	--
Alpha + Beta Endosulfan	0	--	--	na	8.9E+01	--	--	na	2.8E+02	--	--	na	8.9E+00	--	--	na	2.8E+01	--	--	na	2.8E+01
Endosulfan Sulfate	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	1.9E-01	2.2E-02	9.0E-03	na	6.0E-03	2.2E-02	9.0E-03	na	1.9E-02	2.2E-02	9.0E-03	na	1.9E-02
Endrin	0	--	--	na	3.0E-01	--	--	na	9.5E-01	--	--	na	3.0E-02	--	--	na	9.5E-02	--	--	na	9.5E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	9.5E-01	--	--	na	3.0E-02	--	--	na	9.5E-02	--	--	na	9.5E-02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	6.7E+03	--	--	na	2.1E+02	--	--	na	6.7E+02	--	--	na	6.7E+02
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	4.4E+02	--	--	na	1.4E+01	--	--	na	4.4E+01	--	--	na	4.4E+01
Fluorene	0	--	--	na	5.3E+03	--	--	na	1.7E+04	--	--	na	5.3E+02	--	--	na	1.7E+03	--	--	na	1.7E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	2.5E-03	na	--	--	2.5E-03	na	--	--	2.5E-03	na	--
Heptachlor ^c	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	1.3E-01	9.5E-04	na	7.9E-05	1.3E-01	9.5E-04	na	7.9E-05	1.3E-01	9.5E-04	na	7.9E-05
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	1.3E-01	9.5E-04	na	3.9E-05	1.3E-01	9.5E-04	na	3.9E-05	1.3E-01	9.5E-04	na	3.9E-05
Hexachlorobenzene ^c	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	na	2.9E-04	--	--	na	2.9E-04	--	--	na	2.9E-04
Hexachlorobutadiene ^c	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+01
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	na	4.9E-03	--	--	na	4.9E-03	--	--	na	4.9E-03
Alpha-BHC ^c	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	na	1.7E-02	--	--	na	1.7E-02	--	--	na	1.7E-02
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	2.4E-01	--	na	1.8E-01	2.4E-01	--	na	1.8E-01	2.4E-01	--	na	1.8E-01
Gamma-BHC ^c (Lindane)	0	--	--	na	1.1E+03	--	--	na	3.5E+03	--	--	na	1.1E+02	--	--	na	3.5E+02	--	--	na	3.5E+02
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	na	3.3E+00	--	--	na	3.3E+00	--	--	na	3.3E+00
Hexachloroethane ^c	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	5.0E-01	na	--	--	5.0E-01	na	--	--	5.0E-01	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Indeno (1,2,3-cd) pyrene ^c	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone ^c	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+02
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	1.2E+01	1.4E+00	na	--	1.2E+01	1.4E+00	na	--	1.2E+01	1.4E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	3.5E-01	1.9E-01	--	--	3.5E-01	1.9E-01	--	--	3.5E-01	1.9E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	4.8E+03	--	--	na	1.5E+02	--	--	na	4.8E+02	--	--	na	4.8E+02
Methylene Chloride ^c	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	na	5.9E+02	--	--	na	5.9E+02	--	--	na	5.9E+02
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	7.5E-03	na	--	--	7.5E-03	na	--	--	7.5E-03	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	1.5E+04	2.5E+01	2.8E+00	na	4.8E+02	2.5E+01	2.8E+00	na	1.5E+03	2.5E+01	2.8E+00	na	1.5E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	2.2E+03	--	--	na	6.9E+01	--	--	na	2.2E+02	--	--	na	2.2E+02
N-Nitrosodimethylamine ^c	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	na	3.0E+00	--	--	na	3.0E+00	--	--	na	3.0E+00
N-Nitrosodiphenylamine ^c	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	na	6.0E+00	--	--	na	6.0E+00	--	--	na	6.0E+00
N-Nitrosodi-n-propylamine ^c	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	na	5.1E-01	--	--	na	5.1E-01	--	--	na	5.1E-01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	7.0E+00	1.7E+00	--	--	7.0E+00	1.7E+00	--	--	7.0E+00	1.7E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	1.6E-02	3.3E-03	na	--	1.6E-02	3.3E-03	na	--	1.6E-02	3.3E-03	na	--
PCB Total ^c	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	3.5E-03	na	6.4E-05	--	3.5E-03	na	6.4E-05	--	3.5E-03	na	6.4E-05
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	1.9E-03	1.5E-03	na	3.0E+00	1.9E-03	1.5E-03	na	3.0E+00	1.9E-03	1.5E-03	na	3.0E+00
Phenol	0	--	--	na	8.6E+05	--	--	na	2.7E+06	--	--	na	8.6E+04	--	--	na	2.7E+05	--	--	na	2.7E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	1.3E+04	--	--	na	4.0E+02	--	--	na	1.3E+03	--	--	na	1.3E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	1.3E+01	--	--	na	4.0E-01	--	--	na	1.3E+00	--	--	na	1.3E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	1.3E+04	5.0E+00	1.3E+00	na	4.2E+02	5.0E+00	1.3E+00	na	1.3E+03	5.0E+00	1.3E+00	na	1.3E+03
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	2.6E-01	--	na	--	2.6E-01	--	na	--	2.6E-01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	na	4.0E+00
Tetrachloroethylene ^C	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	na	3.3E+00	--	--	na	3.3E+00	--	--	na	3.3E+00
Thallium	0	--	--	na	4.7E-01	--	--	na	1.5E+00	--	--	na	4.7E-02	--	--	na	1.5E-01	--	--	na	1.5E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	1.9E+04	--	--	na	6.0E+02	--	--	na	1.9E+03	--	--	na	1.9E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	1.8E-01	5.0E-05	na	2.8E-04	1.8E-01	5.0E-05	na	2.8E-04	1.8E-01	5.0E-05	na	2.8E-04
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	1.2E-01	1.8E-02	na	--	1.2E-01	1.8E-02	na	--	1.2E-01	1.8E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	2.2E+02	--	--	na	7.0E+00	--	--	na	2.2E+01	--	--	na	2.2E+01
1,1,2-Trichloroethane ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	na	1.6E+01
Trichloroethylene ^C	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	na	3.0E+01
2,4,6-Trichlorophenol ^C	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	na	2.4E+00	--	--	na	2.4E+00	--	--	na	2.4E+00
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	8.2E+04	1.6E+01	1.6E+01	na	2.6E+03	1.6E+01	1.6E+01	na	8.2E+03	1.6E+01	1.6E+01	na	8.2E+03

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	2.0E+02
Arsenic	2.3E+01
Barium	na
Cadmium	9.9E-02
Chromium III	6.3E+00
Chromium VI	1.6E+00
Copper	7.0E-01
Iron	na
Lead	8.4E-01
Manganese	na
Mercury	1.2E-01
Nickel	1.7E+00
Selenium	7.5E-01
Silver	1.0E-01
Zinc	6.5E+00

Note: do not use QL's lower than the minimum QL's provided in agency guidance

ENVIRONMENTAL SYSTEMS SERVICE, LTD.
Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Apr-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1		* No Discharge								
2		*								
3		*								
4		*								
5		*								
6		*								
7		*								
8		*								
9		*								
10		*								
11		*								
12		*								
13		*								
14		*								
15		*								
16		*								
17		*								
18		*								
19		*								
20		*								
21		*								
22		*								
23		*								
24		*								
25		*								
26	12.000	8.70	7.66	18.7						
27	28.700	7.50	7.34	18.5						
28	18.200	8.30	7.92	17.9						
29	4.907	8.50	7.63	16.8	0	0.0	2.00	0.0	1.0	0.000
30	5.137	8.60	7.95	17.6						
31										
TOT	68.944	N/A	N/A	N/A	0	0.00	2.00	0.04	1.00	0.000
AVG	13.789	8.32	N/A	17.9	0	0.00	2.00	0.04	1.00	0.000
MAX	28.700	8.70	7.95	18.7	0	0.00	2.00	0.04	1.00	0.000
MIN	4.907	7.50	7.34	16.8	0	0.00	2.00	0.04	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT: _____
Donald F. Hearl

The information supplied is believed to be true and correct. However, Environmental Systems Service, Ltd. is not liable for information submitted by non-ESS personnel.

OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.

Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** **VA0091651** MONTH/YEAR: **May-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	4.561	8.20	8.00	19.7						
2	12.605	8.10	7.95	23.1						
3	8.590	8.00	8.07	22.6						
4	6.212	7.80	8.22	22.7						
5	6.109	8.00	8.32	22.4	0	0.0	0.00	0.0	1.0	0.000
6	5.318	7.90	8.38	22.9						
7	5.538	7.90	8.37	22.3						
8	14.760	7.80	8.29	24.0						
9	5.914	8.00	8.30	21.9						
10	10.876	8.20	8.45	21.2						
11	11.429	8.20	8.32	20.7						
12	6.983	8.30	8.23	20.1	0	0.0	0.00	0.0	1.0	0.000
13	9.425	8.30	8.21	21.4						
14	12.587	8.10	8.26	21.9						
15	11.091	8.20	8.25	22.8						
16	11.285	7.90	8.22	23.7						
17	5.328	7.80	8.13	23.0						
18	14.489	8.10	8.07	21.8						
19	8.608	8.00	8.21	21.6						
20	10.672	8.00	8.32	21.4	0	0.0	1.90	0.1	1.0	0.000
21	10.327	8.00	8.19	22.5						
22	11.331	7.80	8.17	23.3						
23	13.665	7.80	8.24	24.4						
24	12.260	7.70	8.19	24.2						
25	10.355	7.70	8.07	24.3	0	0.0	1.60	0.1	1.0	0.000
26	7.410	7.70	8.15	24.2						
27	14.133	7.60	8.20	25.6						
28	10.257	7.50	8.19	25.9						
29	12.298	7.50	8.25	25.9						
30	11.161	7.50	8.14	26.0						
31	14.393	7.50	8.16	26.3						
TOT	309.970	N/A	N/A	N/A	0	0.00	3.50	0.14	4.00	0.000
AVG	9.999	7.91	N/A	23.0	0	0.00	0.88	0.03	1.00	0.000
MAX	14.760	8.30	8.45	26.3	0	0.00	1.90	0.08	1.00	0.000
MIN	4.561	7.50	7.95	19.7	0	0.00	0.00	0.00	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT: _____
Donald F. Hearl

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OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.

Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Jun-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	12.805	7.40	8.15	26.8	0	0.0	3.41	0.2	1.0	0.000
2	10.728	7.40	8.06	26.3						
3	10.661	7.30	8.11	26.6						
4	10.578	7.40	8.19	26.7						
5	15.582	7.30	8.15	26.6						
6	10.002	7.30	8.06	27.1						
7	14.410	7.30	8.10	25.5						
8	8.842	7.30	8.05	25.4	0	0.0	3.93	0.1	1.0	0.000
9	6.020	7.48	8.04	23.7						
10	15.877	7.32	8.00	26.6						
11	10.262	7.36	8.01	25.4						
12	12.224	7.30	8.04	32.0						
13	11.727	7.40	8.00	26.8						
14	13.196	7.30	7.93	27.6						
15	11.998	7.30	8.06	28.8						
16	8.743	7.30	7.91	27.2	0	0.0	3.88	0.1	1.0	0.000
17	11.239	7.50	8.04	27.0						
18	10.958	7.50	8.09	27.0						
19	13.001	7.30	8.19	27.5						
20	10.540	7.30	8.24	28.7						
21	11.651	7.30	8.20	28.3						
22	14.175	7.30	8.28	29.0	0	0.0	4.57	0.2	1.0	0.000
23	9.260	7.30	8.16	29.5						
24	7.390	7.30	8.06	29.7						
25	15.544	7.30	8.31	30.2						
26	4.035	7.30	8.11	28.9						
27	17.621	7.30	8.27	30.5						
28	12.936	7.30	8.07	30.2						
29	9.549	7.30	8.00	29.8						
30	8.565	7.30	7.96	28.3						
31										
TOT	339.919	N/A	N/A	N/A	0	0.00	15.79	0.67	4.00	0.000
AVG	11.331	7.34	N/A	27.8	0	0.00	3.95	0.17	1.00	0.000
MAX	17.621	7.50	8.31	32.0	0	0.00	4.57	0.25	1.00	0.000
MIN	4.035	7.30	7.91	23.7	0	0.00	3.88	0.13	1.00	0.000

GEOMETRIC MEAN 1

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT: _____
Donald F. Hearl

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OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.

Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Jul-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	10.703	7.40	7.85	27.9	0	0.0	6.55	0.3	1.0	0.000
2	13.764	7.50	7.97	26.6						
3	9.152	7.60	8.00	27.0						
4	11.449	7.40	7.84	27.7						
5	12.294	7.40	7.91	28.0						
6	16.842	7.30	8.16	28.7						
7	10.544	7.30	8.00	29.1						
8	10.057	7.30	7.96	29.4	0	0.0	7.37	0.3	1.0	0.000
9	14.748	7.30	8.07	30.0						
10	17.573	7.30	8.02	29.6						
11	14.004	7.30	8.04	28.7						
12	10.731	7.30	8.02	28.9						
13	13.899	7.30	7.98	28.8						
14	11.868	7.30	8.14	28.4						
15	12.456	7.30	8.10	28.3	0	0.0	3.14	0.1	1.0	0.000
16	11.680	7.40	8.07	28.8						
17	14.964	7.30	8.02	29.1						
18	14.063	7.30	7.96	29.2						
19	15.215	7.30	8.18	29.5						
20	19.887	7.30	8.09	29.6						
21	15.848	7.30	7.95	29.1	0	0.0	3.83	0.2	1.0	0.000
22	14.150	7.30	7.95	29.4						
23	20.487	7.30	8.07	29.5						
24	15.198	7.30	8.01	29.5						
25	15.092	7.30	8.05	29.9						
26	14.133	7.30	8.16	28.2						
27	13.550	7.30	8.11	28.9						
28	12.653	7.40	8.13	28.8						
29	10.087	7.30	7.93	28.9	0	0.0	3.35	0.1	1.0	0.000
30	19.179	7.40	8.17	28.1						
31	17.349	7.40	8.08	27.9						
TOT	433.619	N/A	N/A	N/A	0	0.00	24.24	1.05	5.00	0.000
AVG	13.988	7.34	N/A	28.8	0	0.00	4.85	0.21	1.00	0.000
MAX	20.487	7.60	8.18	30.0	0	0.00	7.37	0.28	1.00	0.000
MIN	9.152	7.30	7.84	26.6	0	0.00	3.14	0.13	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT: _____
Donald F. Hearl

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OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.**Report of Operation of Sewage Treatment Facility**LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Aug-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	21.663	7.40	8.20	28.7						
2	19.103	7.50	8.12	27.8						
3	16.861	7.70	8.17	27.6	0	0.0	1.60	0.1	1.0	0.000
4	13.361	7.70	8.26	27.4						
5	16.568	7.30	8.12	28.2						
6	15.134	7.40	7.92	27.8						
7	15.722	7.50	8.01	26.9						
8	15.388	7.40	8.06	27.3						
9	15.132	7.40	8.00	28.5	0	0.0	2.10	0.1		
10	14.152	7.40	7.95	28.6					1.0	0.000
11	15.836	7.30	7.80	29.6						
12	13.886	7.30	7.82	29.7						
13	14.792	7.30	7.70	29.5						
14	21.651	7.30	7.96	29.2						
15	17.261	7.30	8.04	28.9						
16	16.101	7.30	7.86	29.2						
17	17.602	7.30	7.48	29.4						
18	16.724	7.30	7.24	28.7						
19	15.740	7.30	7.57	28.4	0	0.0	2.10	0.1	1.0	0.000
20	14.785	7.30	7.20	28.3						
21	18.787	7.30	7.31	28.8						
22	17.756	7.30	7.54	29.2						
23	19.029	7.30	7.60	28.8						
24	17.109	7.30	7.41	29.0	0	0.0	1.30	0.1	1.0	0.000
25	16.599	7.40	7.71	27.5						
26	13.305	7.40	7.85	27.7						
27	16.677	7.50	7.65	27.4						
28	17.447	7.40	7.72	27.9						
29	16.338	7.30	7.44	28.1						
30	16.867	7.30	7.23	28.6						
31	17.016	7.30	7.55	28.2						
TOT	514.392	N/A	N/A	N/A	0	0.00	7.10	0.43	4.00	0.000
AVG	16.593	7.37	N/A	28.4	0	0.00	1.78	0.11	1.00	0.000
MAX	21.663	7.70	8.26	29.7	0	0.00	2.10	0.13	1.00	0.000
MIN	13.305	7.30	7.20	26.9	0	0.00	1.30	0.08	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT:

Donald F. Hearl

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OPERATOR:

Troy C. Jenkins Jr. 1910-003106

Signed:

Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.**Report of Operation of Sewage Treatment Facility**LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Sep-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	15.899	7.40	7.95	27.6	0	0.0	1.80	0.1		
2	11.259	7.40	7.80	27.7					1.0	0.000
3	13.522	7.40	7.58	28.3						
4	15.304	7.40	7.66	28.0						
5	15.295	7.50	7.98	27.0						
6	14.267	7.50	7.47	26.3	0	0.0	1.20	0.1		
7	15.506	7.60	7.97	26.6						
8	12.641	7.70	7.91	27.2					1.0	0.000
9	15.487	7.70	7.98	27.0						
10	15.706	7.70	7.98	26.0						
11	17.329	7.80	7.71	25.6						
12	14.874	7.80	7.80	25.8						
13	16.012	7.70	7.85	26.0	0	0.0	0.00	0.0	1.0	0.000
14	16.071	7.70	7.93	26.1						
15	13.245	7.80	8.02	25.0						
16	12.123	7.80	7.70	25.8						
17	14.974	7.80	7.65	25.9						
18	14.072	7.90	7.56	25.1						
19	14.847	7.90	7.31	25.5						
20	14.244	7.80	7.64	26.1						
21	12.697	7.80	7.58	25.4	0	0.0	1.10	0.1	1.0	0.000
22	14.372	7.80	7.24	25.9						
23	17.089	7.60	7.33	26.6						
24	16.698	7.50	7.21	26.9						
25	17.260	7.50	7.29	27.0						
26	17.291	7.60	7.58	26.5						
27	15.609	7.80	7.58	26.2	0	0.0	0.00	0.0	2.0	0.301
28	16.893	7.80	7.45	26.6						
29	24.548	7.80	7.60	25.8						
30	16.833	7.90	7.47	25.2						
31										
TOT	461.967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AVG	15.399	7.68	N/A	26.4	0	0.00	0.82	0.05	1.20	0.060
MAX	24.548	7.90	8.02	28.3	0	0.00	1.20	0.06	2.00	0.301
MIN	11.259	7.40	7.21	25.0	0	0.00	0.00	0.00	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT:

Donald F. Hearl

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OPERATOR:

Troy C. Jenkins Jr. 1910-003106

Signed:

Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.

Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** **VA0091651** MONTH/YEAR: **Oct-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	26.404	7.90	7.52	25.0						
2	17.399	7.90	7.22	24.4						
3	20.582	7.90	7.09	24.0	0	0.0	0.00	0.0		
4	16.168	8.00	7.06	23.7					1.0	0.000
5	16.506	8.10	7.38	23.2						
6	23.599	8.30	7.66	22.4						
7	17.067	8.50	7.78	22.8						
8	15.988	8.40	7.94	23.0						
9	15.163	8.30	8.03	23.4						
10	16.368	8.30	7.97	23.5						
11	16.908	8.40	7.90	24.2	0	0.0	1.20	0.1		
12	16.541	8.10	7.91	23.9					1.0	0.000
13	16.139	8.20	7.80	23.7						
14	13.897	8.50	7.76	23.3						
15	13.742	8.40	7.47	22.5						
16	16.660	8.40	7.53	22.3						
17	16.598	8.40	7.66	22.3						
18	16.102	8.50	7.23	22.2						
19	17.403	8.40	7.41	22.8						
20	18.970	8.50	7.89	22.8	0	0.0	0.00	0.0	1.0	0.000
21	13.500	8.50	7.64	21.9						
22	13.052	8.50	7.37	21.3						
23	13.340	8.50	7.45	21.5						
24	17.006	8.50	7.33	22.0						
25	15.103	8.40	7.44	22.1						
26	15.326	8.20	7.95	22.3						
27	14.279	8.20	7.71	24.0	0	0.0	1.30	0.1	1.0	0.000
28	17.557	8.00	7.94	23.4						
29	15.687	8.20	8.06	21.4						
30	15.050	8.40	8.01	21.1						
31	15.147	8.30	7.83	21.2						
TOT	513.251	N/A	N/A	N/A	0	0.00	2.50	0.15	4.00	0.000
AVG	16.556	8.29	N/A	22.8	0	0.00	0.63	0.04	1.00	0.000
MAX	26.404	8.50	8.06	25.0	0	0.00	1.30	0.08	1.00	0.000
MIN	13.052	7.90	7.06	21.1	0	0.00	0.00	0.00	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT: _____
Donald F. Hearl

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OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.
Report of Operation of Sewage Treatment Facility

LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Nov-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	15.476	8.50	8.00	20.8						
2	15.051	8.60	7.89	19.8						
3	13.753	8.60	7.85	19.6	0	0.0	1.60	0.1	1.0	0.000
4	13.393	8.70	7.93	20.0						
5	14.565	8.70	7.76	19.8						
6	16.797	8.80	7.94	19.5						
7	14.918	8.80	7.52	19.4						
8	13.883	8.70	7.51	19.7						
9	17.026	8.80	7.33	19.7	0	0.0	0.00	0.0	1.0	0.000
10	14.223	8.60	7.76	20.0						
11	12.334	8.70	7.92	19.2						
12	13.336	8.90	7.50	18.6						
13	12.928	8.80	7.43	18.8						
14	14.581	8.90	7.21	18.6	0	0.0	1.90	0.1		
15	16.012	8.80	7.04	19.4					1.0	0.000
16	17.230	8.70	7.13	19.6						
17	13.298	8.70	7.24	19.8						
18	12.433	8.80	7.59	18.5						
19	13.510	8.80	7.66	18.6						
20	14.756	8.80	7.66	18.5						
21	14.588	8.90	7.69	8.3						
22	16.118	8.80	7.75	18.4	0	0.0	5.92	0.4	1.0	0.000
23	13.062	8.80	7.78	18.5						
24	14.252	8.90	7.74	18.8						
25	14.795	8.90	7.79	18.8						
26	13.146	9.00	7.84	18.8						
27	13.003	9.00	7.81	18.7						
28	15.902	9.10	7.41	17.8						
29	18.062	9.20	7.83	17.3						
30	12.242	9.10	7.73	18.0						
31										
TOT	434.673	N/A	N/A	N/A	0	0.00	9.42	0.55	4.00	0.000
AVG	14.489	8.81	N/A	18.7	0	0.00	2.36	0.14	1.00	0.000
MAX	18.062	9.20	8.00	20.8	0	0.00	5.92	0.36	1.00	0.000
MIN	12.242	8.50	7.04	8.3	0	0.00	0.00	0.00	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

Flag Data: BOD - 11/14/10 SCV outside of acceptance range of 0.6-1.0;

AUTHORIZED AGENT: _____
Donald F. Hearl

The information supplied is believed to be true and correct. However, Environmental Systems Service, Ltd. is not liable for information submitted by non-ESS personnel.

OPERATOR: _____
Troy C. Jenkins Jr. 1910-003106

Signed: _____
Donald F. Hearl, Vice President
Environmental Services Division

ENVIRONMENTAL SYSTEMS SERVICE, LTD.**Report of Operation of Sewage Treatment Facility**LOCATION: **Rush River Wastewater Treatment Plant** VA0091651 MONTH/YEAR: **Dec-10**

Date	Flow X1000	D.O. (mg/l)	pH (SU)	Temp (°C)	BOD (mg/l)	Kg/Day	TSS (mg/l)	Kg/Day	E.COLI	LOG
1	11.711	9.10	7.33	18.4	0	0.0	5.89	0.3	1.0	0.000
2	13.773	9.40	7.52	16.4						
3	14.296	9.70	7.48	16.7						
4	17.659	9.70	7.15	16.3						
5	14.347	9.70	7.09	16.4	0	0.0	1.10	0.1		
6	11.045	9.70	7.06	15.9					1.0	0.000
7	14.821	9.80	7.10	15.2						
8	9.005	10.00	7.75	14.3						
9	10.263	10.00	7.05	14.4						
10	10.495	10.00	7.20	14.2						
11	13.663	10.00	7.55	14.9						
12	15.329	9.70	7.19	15.6						
13	12.948	9.90	7.54	14.8	0	0.0	1.70	0.1		
14	13.069	10.40	7.52	12.9					1.0	0.000
15	11.554	10.50	7.70	12.7						
16										
17										
18										
19										
20										
21										
22									1.0	0.000
23										
24										
25										
26										
27										
28										
29										
30										
31										
TOT	193.978	N/A	N/A	N/A	0	0.00	8.69	0.40	4.00	0.000
AVG	12.932	9.84	N/A	15.3	0	0.00	2.90	0.13	1.00	0.000
MAX	17.659	10.50	7.75	18.4	0	0.00	1.70	0.08	1.00	0.000
MIN	9.005	9.10	7.05	12.7	0	0.00	1.10	0.06	1.00	0.000
GEOMETRIC MEAN									1	

NOTE: "0" sample test result denotes < qualification level (BOD=<5, TSS=<1.0, NH3=<0.2)

AUTHORIZED AGENT:

Donald F. Hearl

The information supplied is believed to be true and correct. However, Environmental Systems Service, Ltd. is not liable for information submitted by non-ESS personnel.

OPERATOR:

Troy C. Jenkins Jr. 1910-003106

Signed:

Donald F. Hearl, Vice President
Environmental Services Division

Thompson, Alison (DEQ)

From: Valeria Compton [valeriac@ess-services.com]
Sent: Tuesday, December 28, 2010 10:26 AM
To: Thompson, Alison (DEQ)
Subject: TOW - Rush River

Attachments: img-Z28101632-0001.pdf



img-Z28101632-000
1.pdf (162 KB...

Good Morning;

Please find attached the effluent sheets for Town of Washington Rush River WWTP. Give me a call if you have any questions.

Val

Valeria Compton
Administrative Assistant
Environmental Systems Service, Ltd.
218 North Main Street
Culpeper, VA 22701
' 540-825-6660
Fax 540-825-4961
valeriac@ess-services.com

Rush River WWTP
VA0091651

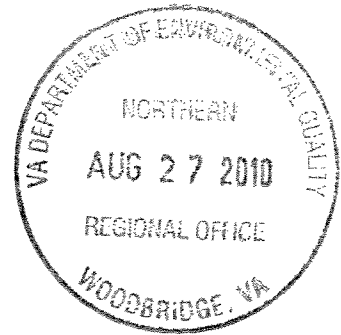
Date	pH (s.u.)	Temperature (C)		
04/26/10	7.66	18.7		
04/27/10	7.34	18.5		
04/28/10	7.92	17.9		
04/29/10	7.63	16.8	90th percentile pH	8.2
04/30/10	7.95	17.6		
05/01/10	8	19.7		
05/02/10	7.95	23.1	90th percentile temp	29.17
05/03/10	8.07	22.6		
05/04/10	8.22	22.7		
05/05/10	8.32	22.4		
05/06/10	8.38	22.9		
05/07/10	8.37	22.3		
05/08/10	8.29	24		
05/09/10	8.3	21.9		
05/10/10	8.45	21.2		
05/11/10	8.32	20.7		
05/12/10	8.23	20.1		
05/13/10	8.21	21.4		
05/14/10	8.26	21.9		
05/15/10	8.25	22.8		
05/16/10	8.22	23.7		
05/17/10	8.13	23		
05/18/10	8.07	21.8		
05/19/10	8.21	21.6		
05/20/10	8.32	21.4		
05/21/10	8.19	22.5		
05/22/10	8.17	23.3		
05/23/10	8.24	24.4		
05/24/10	8.19	24.2		
05/25/10	8.07	24.3		
05/26/10	8.15	24.2		
05/27/10	8.2	25.6		
05/28/10	8.19	25.9		
05/29/10	8.25	25.9		
05/30/10	8.14	26		
05/31/10	8.16	26.3		
06/01/10	8.15	26.8		
06/02/10	8.06	26.3		
06/03/10	8.11	26.6		
06/04/10	8.19	26.7		
06/05/10	8.15	26.6		
06/06/10	8.06	27.1		
06/07/10	8.1	25.5		
06/08/10	8.05	25.4		
06/09/10	8.04	23.7		
06/10/10	8	26.6		
06/11/10	8.01	25.4		
06/12/10	8.04	32		
06/13/10	8	26.8		
06/14/10	7.93	27.6		
06/15/10	8.06	28.8		
06/16/10	7.91	27.2		
06/17/10	8.04	27		
06/18/10	8.09	27		
06/19/10	8.19	27.5		
06/20/10	8.24	28.7		
06/21/10	8.2	28.3		
06/22/10	8.28	29		
06/23/10	8.16	29.5		
06/24/10	8.06	29.7		
06/25/10	8.31	30.2		
06/26/10	8.11	28.9		
06/27/10	8.27	30.5		
06/28/10	8.07	30.2		
06/29/10	8	29.8		
06/30/10	7.96	28.3		
07/01/10	7.85	27.9		
07/02/10	7.97	26.6		
07/03/10	8	27		
07/04/10	7.84	27.7		
07/05/10	7.91	28		
07/06/10	8.16	28.7		
07/07/10	8	29.1		
07/08/10	7.96	29.4		
07/09/10	8.07	30		
07/10/10	8.02	29.6		
07/11/10	8.04	28.7		
07/12/10	8.02	28.9		
07/13/10	7.98	28.8		
07/14/10	8.14	28.4		
07/15/10	8.1	28.3		
07/16/10	8.07	28.8		
07/17/10	8.02	29.1		
07/18/10	7.96	29.2		
07/19/10	8.18	29.5		
07/20/10	8.09	29.6		
07/21/10	7.95	29.1		
07/22/10	7.95	29.4		
07/23/10	8.07	29.5		
07/24/10	8.01	29.5		
07/25/10	8.05	29.9		
07/26/10	8.16	28.2		
07/27/10	8.11	28.9		
07/28/10	8.13	28.8		
07/29/10	7.93	28.9		
07/30/10	8.17	28.1		
07/31/10	8.08	27.9		

08/01/10	8.2	28.7
08/02/10	8.12	27.8
08/03/10	8.17	27.6
08/04/10	8.26	27.4
08/05/10	8.12	28.2
08/06/10	7.92	27.8
08/07/10	8.01	26.9
08/08/10	8.06	27.3
08/09/10	8	28.5
08/10/10	7.95	28.6
08/11/10	7.8	29.6
08/12/10	7.82	29.7
08/13/10	7.7	29.5
08/14/10	7.96	29.2
08/15/10	8.04	28.9
08/16/10	7.86	29.2
08/17/10	7.48	29.4
08/18/10	7.24	28.7
08/19/10	7.57	28.4
08/20/10	7.2	28.3
08/21/10	7.31	28.8
08/22/10	7.54	29.2
08/23/10	7.6	28.8
08/24/10	7.41	29
08/25/10	7.71	27.5
08/26/10	7.85	27.7
08/27/10	7.65	27.4
08/28/10	7.72	27.9
08/29/10	7.44	28.1
08/30/10	7.23	28.6
08/31/10	7.55	28.2
09/01/10	7.95	27.6
09/02/10	7.8	27.7
09/03/10	7.58	28.3
09/04/10	7.66	28
09/05/10	7.98	27
09/06/10	7.47	26.3
09/07/10	7.97	26.6
09/08/10	7.91	27.2
09/09/10	7.98	27
09/10/10	7.98	26
09/11/10	7.71	25.6
09/12/10	7.8	25.8
09/13/10	7.85	26
09/14/10	7.93	26.1
09/15/10	8.02	25
09/16/10	7.7	25.8
09/17/10	7.65	25.9
09/18/10	7.56	25.1
09/19/10	7.31	25.5
09/20/10	7.64	26.1
09/21/10	7.58	25.4
09/22/10	7.24	25.9
09/23/10	7.33	26.6
09/24/10	7.21	26.9
09/25/10	7.29	27
09/26/10	7.58	26.5
09/27/10	7.58	26.2
09/28/10	7.45	26.6
09/29/10	7.6	25.8
09/30/10	7.47	25.2
10/01/10	7.52	25
10/02/10	7.22	24.4
10/03/10	7.09	24
10/04/10	7.06	23.7
10/05/10	7.38	23.2
10/06/10	7.66	22.4
10/07/10	7.78	22.8
10/08/10	7.94	23
10/09/10	8.03	23.4
10/10/10	7.97	23.5
10/11/10	7.9	24.2
10/12/10	7.91	23.9
10/13/10	7.8	23.7
10/14/10	7.76	23.3
10/15/10	7.47	22.5
10/16/10	7.53	22.3
10/17/10	7.66	22.3
10/18/10	7.23	22.2
10/19/10	7.41	22.8
10/20/10	7.89	22.8
10/21/10	7.64	21.9
10/22/10	7.37	21.3
10/23/10	7.45	21.5
10/24/10	7.33	22
10/25/10	7.44	22.1
10/26/10	7.95	22.3
10/27/10	7.71	24
10/28/10	7.94	23.4
10/29/10	8.06	21.4
10/30/10	8.01	21.1
10/31/10	7.83	21.2
11/01/10	8	20.8
11/02/10	7.89	19.8
11/03/10	7.85	19.6
11/04/10	7.93	20
11/05/10	7.76	19.8
11/06/10	7.94	19.5
11/07/10	7.52	19.4
11/08/10	7.51	19.7
11/09/10	7.33	19.7
11/10/10	7.76	20
11/11/10	7.92	19.2

11/12/10	7.5	18.6
11/13/10	7.43	18.8
11/14/10	7.21	18.6
11/15/10	7.04	19.4
11/16/10	7.13	19.6
11/17/10	7.24	19.8
11/18/10	7.59	18.5
11/19/10	7.66	18.6
11/20/10	7.66	18.5
11/21/10	7.69	8.3
11/22/10	7.75	18.4
11/23/10	7.78	18.5
11/24/10	7.74	18.8
11/25/10	7.79	18.8
11/26/10	7.84	18.8
11/27/10	7.81	18.7
11/28/10	7.41	17.8
11/29/10	7.83	17.3
11/30/10	7.73	18
12/01/10	7.33	18.4
12/02/10	7.52	16.4
12/03/10	7.48	16.7
12/04/10	7.15	16.3
12/05/10	7.09	16.4
12/06/10	7.06	15.9
12/07/10	7.1	15.2
12/08/10	7.75	14.3
12/09/10	7.05	14.4
12/10/10	7.2	14.2
12/11/10	7.55	14.9
12/12/10	7.19	15.6
12/13/10	7.54	14.8
12/14/10	7.52	12.9
12/15/10	7.7	12.7

<u>Station ID</u>	<u>Station Description</u>	<u>Collection Date</u>	<u>Field pH</u>
3-RUS003.23	Rt. 621	4/23/07	7.6
3-RUS005.24	Rt. # 626	3/28/07	8.9
3-RUS005.24	Rt. # 626	5/31/07	7.8
3-RUS005.24	Rt. # 626	7/17/07	7.7
3-RUS005.24	Rt. # 626	11/26/07	7.3
3-RUS005.24	Rt. # 626	1/29/08	7.6
3-RUS005.24	Rt. # 626	3/24/08	7.8
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	6/15/00	7.53
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	8/17/00	7.25
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	10/11/00	7.23
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	3/28/01	7.16
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	5/8/01	7.7
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	12/27/01	7
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	4/18/02	7
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	2/12/03	7.78
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	4/16/03	8.42
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	5/21/03	7.05
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	7/23/03	6.84
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	9/15/03	7.11
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	7/22/04	7.46
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	9/27/04	7.27
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	11/18/04	7.73
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	1/20/05	6.81
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	3/16/05	7.27
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	5/24/05	7.47
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	6/27/05	7.53
3-RUS005.66	Rt. # 683 (upstream of Rt. #211/522)	4/23/07	7.5
3-RUS007.41	Rt. 624	3/28/07	8.7
3-RUS007.41	Rt. 624	5/31/07	7.7
3-RUS007.41	Rt. 624	7/17/07	7.8
3-RUS007.41	Rt. 624	11/26/07	7.3
3-RUS007.41	Rt. 624	1/29/08	7.4
3-RUS007.41	Rt. 624	3/24/08	7.9
Facility's sampling	75 ft upstream of outfall	8/9/10	7.14
Facility's sampling	75 ft downstream of outfall	8/9/10	6.71
Facility's sampling	75 ft upstream of outfall	9/9/10	7.08
Facility's sampling	75 ft downstream of outfall	9/9/10	7.14

90th percentile of all available pH values 7.84
Database searched all values between
Jan 1, 2000 and December 31, 2010



August 25, 2010

Mr. Doug Frasier
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

Subject: Town of Washington Rush River Wastewater Treatment Facility Instream
Monitoring for August 2010, VPDES Permit VA0091651 Part I.C.13,

Dear Mr. Frasier,

As required by The Town of Washington Rush River Wastewater Treatment Plant VPDES Permit VA0091651 Part I.C.13, Environmental Systems Service, Ltd. (ESS) has performed the August Instream Monitoring at the Rush River. Photos taken during the monitoring can be found in Attachment 1.

Methodology:

The Rush River Monitoring was performed on August 9, 2010 at approximately 1500. The monitoring was conducted during a low flow of the Rush River. The preceding significant precipitation event occurred on August 5, 2010 (0.71"). Therefore the stream monitoring was conducted greater than 72 hours.

Monitoring stations in the Rush River were chosen by measuring 75' upstream and downstream of Outfall 001 (discharge of Rush River WWTP). At each location field measurements of Dissolved Oxygen (DO), Temperature, and pH were measured. DO and temperature were measured by using a calibrated YSI 550A portable DO meter. pH was measured by using a calibrated HachSensION1 portable pH meter. Additionally, a sample was collected at each location, preserved in a cooler on ice and analyzed in our laboratory in Culpeper, Virginia for Ammonia, while maintaining a chain of custody for the samples. See Attachment 2 for field notes, laboratory analysis benchsheet of ammonia, and sample chains of custody.

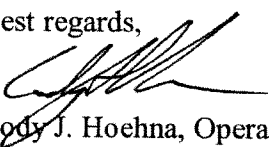
Monitoring Results:

The monitoring results for the August 2010 Rush River Instream Monitoring are found below in Table 1.

Table 1		
Parameter	Upstream, 75'	Downstream, 75'
DO	8.9 mg/L	9.4 mg/L
pH	7.14 SU	6.71 SU
Temperature	27.4 °C	28.1 °C
Ammonia	<0.1 mg/L	<0.1 mg/L

Should you have questions or require additional information, please feel free to contact me at 540-825-6660.

Best regards,



Cody J. Hoehna, Operations Manager
Environmental Services Division

Cc: John Sullivan, Mayor
Town of Washington

Attachment



September 21, 2010

Mr. Doug Frasier
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

Subject: Town of Washington Rush River Wastewater Treatment Facility Instream
Monitoring for September 2010, VPDES Permit VA0091651 Part I.C.13,

Dear Mr. Frasier,

As required by The Town of Washington Rush River Wastewater Treatment Plant VPDES Permit VA0091651 Part I.C.13, Environmental Systems Service, Ltd. (ESS) has performed the September Instream Monitoring at the Rush River. Photos taken during the monitoring can be found in Attachment 1.

Methodology:

The Rush River Monitoring was performed on September 9, 2010 at approximately 10:30am. The monitoring was conducted during a low flow of the Rush River. The preceding significant precipitation event occurred on August 26, 2010 (0.12"). Therefore the stream monitoring was conducted greater than 72 hours.

Monitoring stations in the Rush River were chosen by measuring 75' upstream and downstream of Outfall 001 (discharge of Rush River WWTP). At each location field measurements of Dissolved Oxygen (DO), Temperature, and pH were measured. DO and temperature were measured by using a calibrated YSI 550A portable DO meter. pH was measured by using a calibrated HachSensION1 portable pH meter. Additionally, a sample was collected at each location, preserved in a cooler on ice and analyzed in our laboratory in Culpeper, Virginia for Ammonia, while maintaining a chain of custody for the samples. See Attachment 2 for field notes, laboratory analysis benchsheet of ammonia, and sample chains of custody.

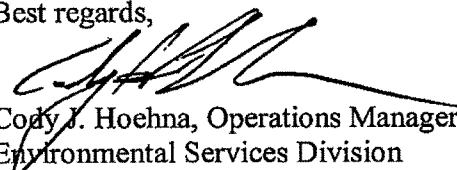
Monitoring Results:

The monitoring results for the September 2010 Rush River Instream Monitoring are found below in Table 1.

Table 1		
Paramter	Upstream, 75'	Downstream, 75'
DO	7.55 mg/L	7.23 mg/L
pH	7.08 SU	7.14 SU
Temperature	23.6 °C	21.8 °C
Ammonia	<0.1 mg/L	<0.1 mg/L

Should you have questions or require additional information, please feel free to contact me at 540-825-6660.

Best regards,



Cody J. Hoehna, Operations Manager
Environmental Services Division

Cc: John Sullivan, Mayor
Town of Washington

Attachment

1/5/2011 7:56:50 AM

Facility = Rush River WWTP
Chemical = Ammonia as N
Chronic averaging period = 30
WLAa = 1.4
WLAc = 0.54
Q.L. = .2
samples/mo. = 4
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average = 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.08954185044481
Average Weekly limit = 1.08954185044481
Average Monthly Limit = 0.744947788191289

The data are:

REGIONAL MODELING SYSTEM VERSION 4.0
**Model Input File for the Discharge
to RUSH RIVER.**

File Information

File Name: I:\saoakes\PERMITS\TownofWashington\Rush River10_27_05.mod
Date Modified: October 27, 2005

Water Quality Standards Information

Stream Name: RUSH RIVER
River Basin: Rappahannock River Basin
Section: 04
Class: III - Nontidal Waters (Coastal and Piedmont)
Special Standards: None

Background Flow Information

Gauge Used: Rush River at Washington, VA (01662500)
Gauge Drainage Area: 14.7 Sq.Mi.
Gauge 7Q10 Flow: 0 MGD
Headwater Drainage Area: 14.7 Sq.Mi.
Headwater 7Q10 Flow: 0 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges: 0 MGD
Incremental Flow in Segments: 0 MGD/Sq.Mi.

Background Water Quality

Background Temperature: 25 Degrees C
Background cBOD5: 2 mg/l
Background TKN: 0 mg/l
Background D.O.: 7.338357 mg/l

Model Segmentation

Number of Segments: 1
Model Start Elevation: 622 ft above MSL
Model End Elevation: 479 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to RUSH RIVER.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	RUSH RIVER WWTP
VPDES Permit No.:	

Discharger Flow Information

Flow:	0.06 MGD
cBOD5:	12 mg/l
TKN:	5 mg/l
D.O.:	6 mg/l
Temperature:	25 Degrees C

Geographic Information

Segment Length:	4.9 miles
Upstream Drainage Area:	14.7 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	622 Ft.
Downstream Elevation:	479 Ft.

Hydraulic Information

Segment Width:	5 Ft.
Segment Depth:	0.15 Ft.
Segment Velocity:	0.155 Ft./Sec.
Segment Flow:	0.06 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Wide Shallow Arc
Character:	Mostly Straight
Pool and Riffle:	Yes
Percent Pools:	70
Percent Riffles:	30
Pool Depth:	0.2 Ft.
Riffle Depth:	0.05 Ft.
Bottom Type:	Large Rock
Sludge:	None
Plants:	Few
Algae:	Only On Edges

ModeldataRun2

"Model Run For I:\saoakes\PERMITS\TownofWashington\Rush River10_27_05.mod On 10/27/2005 8:41:18 AM"

"Model is for RUSH RIVER."

"Model starts at the RUSH RIVER WWTP discharge."

"Background Data"

"7Q10"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
0,	2,	0,	7.338,	25

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.06,	12,	5,	.6,	25

"Hydraulic Information for Segment 1"

"Length"	"width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
4.9,	5,	.15,	.155

"Initial Mix values for Segment 1"

"Flow"	"DO"	"cBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.06,	6,	30,	8.66,	8.175,	25

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
1.2,	1.51,	17.51,	19.715,	.4,	.588,	0,	0

"Output for Segment 1"

"Segment starts at RUSH RIVER WWTP"

"Total"	"Segm."	"Dist."	"DO"	"cBOD"	"nBOD"
"(mi)"	"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	6,	30,	8.66	
.1,	.1,	5.837,	28.266,	8.462	
.2,	.2,	5.834,	26.633,	8.268	
.3,	.3,	5.901,	25.094,	8.079	
.4,	.4,	5.997,	23.644,	7.894	
.5,	.5,	6.102,	22.278,	7.713	
.6,	.6,	6.208,	20.991,	7.536	
.7,	.7,	6.311,	19.778,	7.363	
.8,	.8,	6.409,	18.635,	7.194	
.9,	.9,	6.503,	17.558,	7.029	
1,	1,	6.592,	16.543,	6.868	
1.1,	1.1,	6.676,	15.587,	6.711	
1.2,	1.2,	6.755,	14.686,	6.557	
1.3,	1.3,	6.83,	13.837,	6.407	
1.4,	1.4,	6.901,	13.037,	6.26	
1.5,	1.5,	6.968,	12.284,	6.117	
1.6,	1.6,	7.031,	11.574,	5.977	
1.7,	1.7,	7.091,	10.905,	5.84	
1.8,	1.8,	7.147,	10.275,	5.706	
1.9,	1.9,	7.2,	9.681,	5.575	
2,	2,	7.251,	9.122,	5.447	
2.1,	2.1,	7.298,	8.595,	5.322	
2.2,	2.2,	7.343,	8.098,	5.2	
2.3,	2.3,	7.357,	7.63,	5.081	
2.4,	2.4,	7.357,	7.189,	4.965	
2.5,	2.5,	7.357,	6.774,	4.851	
2.6,	2.6,	7.357,	6.383,	4.74	
2.7,	2.7,	7.357,	6.014,	4.631	

ModeldataRun2

2.8,	2.8,	7.357,	5.666,	4.525
2.9,	2.9,	7.357,	5.339,	4.421
3,	3,	7.357,	5.03,	4.32
3.1,	3.1,	7.357,	5,	4.221
3.2,	3.2,	7.357,	5,	4.124
3.3,	3.3,	7.357,	5,	4.03
3.4,	3.4,	7.357,	5,	3.938
3.5,	3.5,	7.357,	5,	3.848
3.6,	3.6,	7.357,	5,	3.76
3.7,	3.7,	7.357,	5,	3.674
3.8,	3.8,	7.357,	5,	3.59
3.9,	3.9,	7.357,	5,	3.508
4,	4,	7.357,	5,	3.428
4.1,	4.1,	7.357,	5,	3.349
4.2,	4.2,	7.357,	5,	3.272
4.3,	4.3,	7.357,	5,	3.197
4.4,	4.4,	7.357,	5,	3.124
4.5,	4.5,	7.357,	5,	3.052
4.6,	4.6,	7.357,	5,	2.982
4.7,	4.7,	7.357,	5,	2.914
4.8,	4.8,	7.357,	5,	2.847
4.9,	4.9,	7.357,	5,	2.782

"END OF FILE"

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater/stormwater into a water body in Rappahannock, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2011 to 5:00 p.m. on XXX, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Town of Washington, 485 Gay Street, Washington, VA 22747 VA0091651

NAME AND ADDRESS OF FACILITY: Rush River WWTP, 564 Warren Ave, Washington, VA 22747

PROJECT DESCRIPTION: The Town of Washington has applied for a reissuance of a permit for the public Rush River WWTP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.06 million gallons per day into a water body. The sludge will be disposed by hauling the sludge to an approved facility (Remington WWTP) for further treatment. The facility proposes to release the treated sewage wastewaters in the Rush River in Rappahannock County in the Rappahannock watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD, Total Suspended Solids, Dissolved Oxygen, Total Kjeldahl Nitrogen *E. coli*, Total Phosphorus, and Total Nitrogen.

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Alison Thompson

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3834 E-mail: Alison.Thompson@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	<u>Rush River WWTP</u>
NPDES Permit Number:	<u>VA0091651</u>
Permit Writer Name:	<u>Alison Thompson</u>
Date:	<u>January 5, 2011</u>

Major ☐Minor ☒Industrial ☐Municipal ☒**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit? Completed 1/23/2008			
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

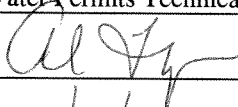
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?	X		

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Alison Thompson</u>
Title	<u>Water Permits Technical Reviewer</u>
Signature	<u></u>
Date	<u>1/5/11</u>